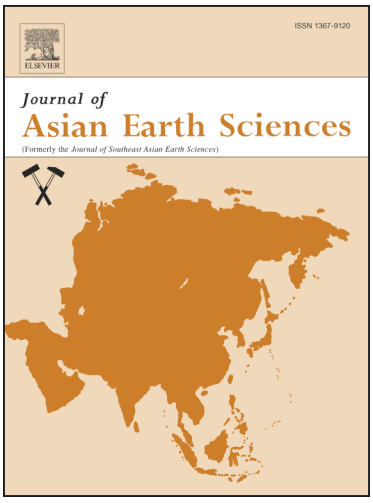

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Mohd Basril Iswadi Basori, Sarah Gilbert, Ross Raymond Large, Khin Zaw

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Textures and trace element composition of pyrite from the Bukit Botol volcanic-hosted massive sulphide deposit, Peninsular Malaysia

Mohd Basril Iswadi Basori[a*], Sarah Gilbert[b,c], Ross Raymond Large[b], Khin Zaw[b]

a. Geology Programme, Faculty of Science and Technology, National University of Malaysia (UKM), SELANGOR, 43600, Malaysia

b. ARC Centre of Excellence in Ore Deposits (CODES), University of Tasmania, Hobart, TAS, 7001, Australia

c. Adelaide Microscopy, The University of Adelaide, Frome Road, SA, 5005, Australia

*corresponding author:

Email: basril@ukm.edu.my

Telephone: +60 3 8921 5572

Fax: +60 3 8921 5490

ABSTRACT

The Bukit Botol volcanic-hosted massive sulphide (VHMS) deposit is located in the Central Belt of Peninsular Malaysia. The deposit occurs in a package of Permian-aged coherent felsic volcanic and volcaniclastic rocks which have a geochemical signature indicative of a volcanic arc tectonic setting. Mineralisation shows distinct ore zonation, forming a stringer to massive sulphide zone at the footwall followed by barite lenses and exhalite layers (Fe-Mn ore) at the top. Mineralogy is characterised by pyrite as the major sulphide mineral, with minor chalcopyrite, sphalerite, and rare galena; traces of gold, silver- and tin-bearing minerals also occur in the massive sulphide and barite ores. Laser ablation inductively coupled plasma mass spectrometry (LA−ICP−MS) analysis combined with the textural characteristics of pyrite provides evidence for significant variations of trace elements in different pyrite types at Bukit Botol, having three types of pyrite in the paragenetic sequence. The concentrations